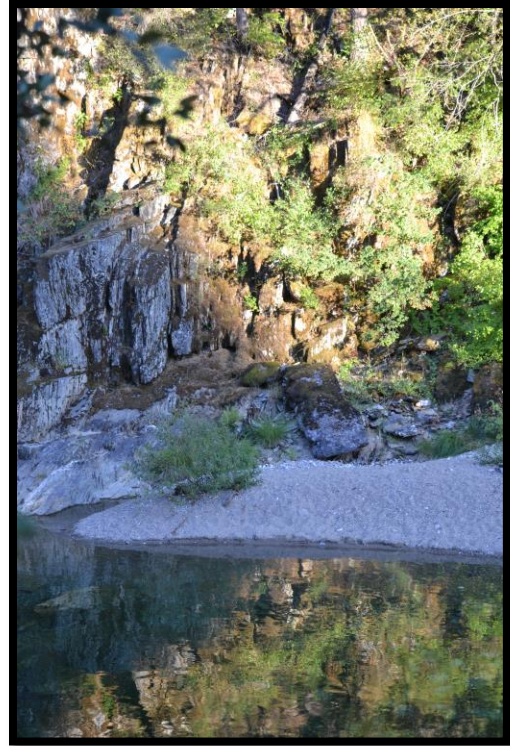


Chapter 9

Issues and Objectives

9.1 Process to Identify Issues and Objectives

The purpose of this chapter is to present the process by which CABY membership and stakeholders developed Plan goals and objectives, and the consistency of those objectives with mandatory State plans and Water Code requirements. In addition, this chapter identifies the measurement metrics that the group established in order to create accountability within the system and ensure implementation of projects which serve to meet the identified objectives.



The goals and objectives presented in this chapter were developed by assessing the issues, conflicts, and Resource Management Strategies (RMS) identified within the CABY region and formulating actions to address each of them. The CABY Planning Committee (PC) specifically designed the planning effort to provide a direct connection between the identified region-specific issues and conflicts, the State Water Plan RMS, the development of measurable objectives, and creation of implementation projects that serve to meet the specified outcomes/measurable objectives. Further, the PC directed that issues and objectives should be presented in the same chapter, along with water-related conflicts to ensure that these concepts were dealt with in a comprehensive and coherent manner.

9.1.1 Work Groups Responsible for Developing Goals and Objectives

Consistent with the CABY preference for making use of Work Groups (WGs), supported by CABY members and stakeholders, to focus on individual chapters or Plan components, the PC identified three Work Groups to support preparation of the Issues and Objectives chapter: Issues Work Group, Objectives Work Group, and Water Work Group. The activities of these committees were coordinated so that each WG both informed and was informed by the activities of the others. CABY has a strong history of collaboration and it is not uncommon for the same CABY member to be on multiple WGs. This was definitely the case with these three committees and the overlap in participation further served to ensure ‘cross-pollination’ between the work efforts.

9.1.2 Issues Work Group

The Issues WG began its work by reviewing the refined issues list developed at the PC Plan Update kick-off meeting in late 2011. The PC member’s list identified issues that were retained from the 2008 IRWMP, new and emerging issues, and also aspects of previously identified issues that had changed since adoption of the previous Plan. The group developed definitions/descriptions of each issue to support thorough vetting of each issue and ensure that each member’s particular interest or perspective

was thoroughly discussed. (See Appendix F - Background Information that Supports Identification of Issues, for more detail.)

The Issues WG generated an initial list of more than 40 issues relevant to the CABY region. Following review of the WG-generated list, the PC tasked the Issues Work Group to combine and organize a final issues list to support development of a list of practical objectives for the region. During this meeting, the PC also developed a list of five 'Programmatic Areas' to help organize the structure of the issues, objectives and projects. These Programmatic Areas include: 1) Water Supply, 2) Water Quality, 3) Environment and Habitat, 4) Climate Change, and 5) Human-Landscape Interaction. See Section 9.2, Programmatic Goals, for a discussion of how these areas supported creation of a framework for development of Plan goals.

The Issues Work Group met and reorganized the issues list into the five Programmatic Areas. They also developed a structure of 'Primary' and 'Secondary' issues as displayed in Table 9-1, Program Goals, below. The primary issues identified categories of issue, while the secondary issues clarified when a primary issue had multiple components or aspects of concern. It was noted during this process that some issues were relevant to more than one programmatic area. In these cases, the most relevant programmatic area was chosen in order to minimize confusion and to ensure consistency throughout the list.

9.1.3 Goals and Objectives Work Group

The Objectives WG met specifically to discuss prioritization and to develop a format to display the objectives. The Group also developed objectives for the secondary issues. For example, in cases such as Governance where a primary issue was assigned multiple secondary issues (e.g., 'Political,' 'Legislative,' and 'Regulatory'), the objectives were compiled for all three secondary issues but not for the primary issue.

The PC was very clear in its direction that the objectives needed to include actual implementation targets rather than a simple list of the types of measures that could be used to assess implementation. For example, in the case of the objective to enhance meadows, the actual number of five meadow projects as well as a specific implementation target date was specified. This ensures that a certain number of meadow projects will be implemented before the objective is considered 'attained.' Input from the Issues WG and the PC supported definition of the measurement components of many objectives. The Issues WG reviewed the draft objectives and the suite of objectives was approved, with a few minor edits. At the same time, the Water WG provided input on the issues and objectives which was also integrated into the final versions of the text. This interaction between the three WGs also resulted in the recommendation that the conflicts section of the Region Description be moved into this chapter. This recommendation was based on the need to ensure that any regional conflicts were considered during development of both the issues and objectives of the Plan.

9.1.4 CABY Water Work Group

The CABY Water Work Group was created in 2009 to address technical water management issues throughout the CABY region. Because the CABY PC outreach and coordination was so successful, it resulted in a diverse array of participants with different perspectives on water and watershed management. Detailed and technical conversations were not always appropriate or productive within the larger PC meetings, so water purveyors and others assembled a smaller technical group to advance projects and ideas specifically on the topic of water supply, delivery, and management. This group met

regularly through the end of 2010, at which point budgetary concerns resulted in the Group going on hiatus until the end of 2011.

The PC and Objectives WG discussion of the objectives and an assessment of the chapter outline elicited several comments and highly technical discussions concerning water supply. Initially, the Planning Committee asked that the Objectives WG meet again to discuss these issues, but instead decided to reconvene the CABY Water WG for this particular discussion. The CABY Water WG met and made changes in wording and nuance to several issues and objectives within the section outline. These changes were brought back to the CABY Objectives WG for continued discussion and affirmation.

The CABY Water WG meeting also initiated discussions focusing on a variety of CABY-wide initiatives. Several issues throughout the region have moved from concept to reality since the 2007 Plan. Participants expressed a desire for CABY to begin discussing those issues and address them through regional conversation, with the possible aim of developing a regionwide set of principles. The issues identified at this meeting and throughout the issues and objectives development process include: the management of water resources and conveyance for anadromous fish habitat, the imbalance of water supply and population between the northern and southern parts of the CABY region, and the value (financial and otherwise) of keeping water resources within the region versus being a source area for transfers south of the Delta. The desire to have this discussion was codified in the objective under “Water Transfers” (Objective WS-7), with a due date for outcomes by January 2014.

9.2 Programmatic Goals

To provide a framework for the development of specific objectives, a framework of programs was identified by the PC. This list of program areas include: Water Supply, Water Quality, Environment and Habitat, Climate Change, and Human-Landscape Interaction. The Objectives WG, in consultation with other issue-specific WGs, developed goals for each recommended program. Table 9-1 (below) identifies the goals that were developed by the WG effort and ultimately approved and adopted by the PC. These goals then became the organizing principle for the objectives.

Table 9-1 Program Goals	
Program Area	Goal
Water Supply	Ensure adequate and reliable supply that can be adapted to climate change and can meet the needs of the region
Water Quality	Ensure sufficient water quality to support healthy ecosystems and dependent organisms
Environment and Habitat	Preserve and restore watershed health
Climate Change	Anticipate climate change needs and be prepared to respond adaptively to human and ecosystem needs
Human-Landscape Interaction	Maintain and enhance functioning landscapes that provide sustainable services for humans

Table 9-2, CABY Issues Organization, illustrates each program area, the primary issues associated with that program, and the secondary issues which were identified to support development of more specific objectives and targeted outcomes.

Table 9-2 CABY Issues Organization		
Programmatic Area	Primary Issue	Secondary Issue
Water Supply	Conservation	none
	Infrastructure	Aging Infrastructure
		Interties
	Water Storage	none
	Water Management Operations	Drought
		Recycled Water
	Water Transfers	none
	Groundwater	none
Water Quality	Contamination	Legacy Mining Toxins
		Urban/Abandoned Mine Land Runoff
	Sediment Management	none
	Wastewater Management	none
	Headwaters Protection	none
	Temperature	none
Environment and Habitat	Fisheries	Fish Passage
	Aquatic Biota	none
	Instream Flow	none
	Meadows	none
	Fire and Fuels	none
	Invasive Species	Aquatic Invasive Species
		Terrestrial Invasive Species
Climate Change	none	none
Human-Landscape Interaction	Habitat Alteration	none
	Native American Uses	none
	Flooding	none
	Open Space	none
	Disadvantaged Communities	none
	Recreation	none
	Hydropower	none
	Agriculture	none
	Sustainable Economy/Self Sufficient Communities	none
	Governance	Political
		Legislative
		Regulatory
Other	Topic	
Over-arching Issues/Objectives	Education and Outreach	
	Financial Feasibility and Sustainability	
	Data Analysis and Monitoring	
	Regional Planning and Land Use	
Conflicts	Growth and Land Use	
	Dams	
	Agriculture	

9.3 *Prioritization of Objectives*

Since 2006, the CABY PC has consistently rejected the idea of prioritizing issues or objectives within the IRWMP. Many stakeholders have expressed the view that this practice would not only result in unneeded conflict between member entities, but that prioritizing objectives would be similar to comparing ‘apples and oranges’; that is, each objective is so different from the next that they cannot be ranked effectively. Additionally, the objectives further complicated any attempt to prioritize objectives or issues. The Issues and Objectives WGs, as well as the PC, wanted to ensure that the objectives were achievable measures of success, and that implementation of projects would directly support measuring the success of the CABY IRWMP.

9.4 *Final Objectives and Measurable Objectives*

As described above, the CABY PC approved the development of 41 objectives for the CABY IRWMP 2013 Update. These are listed in Table 9-4, CABY Goals, Objectives, Target Outcomes, and Performance Measures, at the end of this chapter, and are described in more depth in Appendix F – Background Information that Supports Identification of Objectives. Additionally, as discussed above, each objective includes the specific quantitative or qualitative target outcomes by which overall success will be measured. Every objective has the target outcome that is directly associated with the objective, as well as performance measures that will be used to further assess the outcomes of all projects associated with meeting a particular objective. This structure was chosen because the CABY stakeholders wanted to intentionally hold the Plan to a high standard. It was determined that matching the targeted outcomes (with specific measures of accountability) with each objective would increase the probability that the identified objective would be achieved.

CABY reached consensus early in Plan development that the group did not want to use generic forms of measurement, but wanted instead to establish firm and identified targeted outcomes concurrent with development of individual objectives. For example, rather than gauge success by an unspecified number of acres restored after the Plan is implemented, CABY chose to indicate the actual number of acres to be restored and by what date, in order for the Plan to claim full implementation of that objective. The group wanted to establish a performance bar that would drive project development, pursuit of funding, and partnership opportunities, and ensure a focus on specific outcomes.

9.5 *Overarching Objectives*

The overarching objectives are planning elements that CABY stakeholders hold as essential to all project activities, and are considered key concepts at the implementation level. These are deemed to be intrinsic components of every implementation project pursued through the Plan. As a result, these overarching objectives are more particularly focused on implementation and project development than on being separate Plan objectives. In other words, rather than judge the Plan by its reaching these objectives, individual projects will be assessed against these objectives which will be included in project-specific performance review criteria.

9.5.1 Education and Outreach

CABY PC considers education and outreach essential to building and maintaining the agency and public support necessary to continue support for sustainable, collaborative approaches to managing CABY’s resources. As a result, stakeholders have prioritized the creation of educational materials, delivering of workshops and presentations, production of project-related informational brochures, delivering

systematic public education activities, and other similar project components, as essential to making the CABY Plan and process relevant to regional stakeholders who are not directly involved in CABY activities or individual project implementation.

9.5.2 Data Analysis and Monitoring

One of the benefits of the IRWMP process is the sharing of data and findings between organizations and entities. In order to preserve and enhance this benefit, stakeholders have identified the sharing of data and continual development of the Sacramento Watershed Information Module (SWIM) website and CABY webpage as an integral component to IRWMP preparation and update, as well as project implementation. Further, the ongoing monitoring associated with project implementation will be critical information for other stakeholders both in and out of region to assist in the progressive refinement of project development strategies and identification of appropriate project-specific performance measures. Finally, the data collection and monitoring will support the assessment of Plan performance as required by the PC and DWR. As a result, all CABY implementation projects are expected to upload their data to the SWIM website, create and provide content to populate project-specific webpages, upload all relevant data to appropriate State databases, and consider their education and outreach activities as integrally associated with the data analysis and monitoring work.

9.6 Conflicts

This section presents an overview of the water resource management conflicts that have the most significance within the CABY region. For purposes of this section, issues are defined as problems facing the watershed that have been identified by stakeholders or the Project Team preparing this Plan; conflicts involve prolonged and seemingly irreconcilable approaches to resolving an issue.

9.6.1 Issues vs. Conflicts

An issue becomes a conflict only if there is seemingly irresolvable and prolonged dispute about the issue's resolution. Differing opinions, interpretations of available data, and perspectives on the significance of an issue does not intrinsically make an issue a conflict. CABY has taken the proactive step of identifying objectives that would assist in resolving these differences. In some cases, CABY members have joined together to develop specific projects that would solve divergent interpretations or lack of available data.

The communication that the PC, CC, WGs, and collaborative project-integration activities has fostered has contributed significantly to the ability of the group to identify strategies to avoid conflicts through expending hard work on addressing issues. There also appears to be a greater willingness on the part of CABY members and stakeholders to attempt to resolve differences through negotiation and collaborative processes provided by the IRWM venue. In terms of individual implementation projects, CABY has established a conflict-resolution process (see Chapter 12, Section 12.7.2 - Development of a Conflict Resolution Process). In spite of these efforts, one lingering conflict remains (Construction of New Surface Water Storage Facilities), as discussed below, in Section 9.6.2.

9.6.2 Conflicts Identified in Previous IRWMP

The major conflict issues identified in the previous Plan were growth and land development, new dam construction, and FERC relicensing.

Over the passage of time it has become clear that, while there are differences in opinion, position and/or values held by the various stakeholders, there are appropriate venues to deal with both the land use and FERC-related issues.

Land Use: In the case of land use and growth, the conversations and outcomes of the work associated with the Water and Land Use chapter (see Chapter 8, Water and Land Use) made it clear that the CABY water and land use decision-makers have a high degree of coordination. Some recommendations to improve the existing communication and collaboration were identified and are included in the section. Further, it has become clear that the process used to update general plan and local rezoning are the more appropriate venues for these discussions. CABY has no ability to directly impact these processes. Instead, CABY members are responsible for advocating specific policies or decisions as representatives of their respective groups. Finally, the IRWMP addresses stakeholder-identified growth-related issues through projects and programs that make more efficient use of existing water supplies and link the consequences of land-use decisions, water management, and the environment. CABY stakeholders continue to recruit participation of additional land use agencies in the decision-making process. Sensitive issues that the group has identified as associated with land use decision-making (via general plan adoption) include: fragmentation and/or loss of open space and biodiversity, depletion of water resources, degradation of air quality, degradation of water quality, increased generation of waste, and use of raw water versus tertiary-treated water.

FERC: The hydropower dams on the Yuba, Bear, and American Rivers were first licensed by FERC almost 50 years ago and most have undergone relicensing in the past decade. The dams owned and operated by Yuba County Water Agency are currently being relicensed. The hydropower relicensing process addresses different interests of power generation, ecosystem health, water reliability, and recreational opportunities in river stretches impacted by hydropower facilities.

In the CABY region, PG&E, El Dorado Irrigation District, Sacramento Municipal Utilities District (SMUD), and Placer County Water Agency have all either obtained their FERC licenses or are in the final stages of relicensing (e.g., SMUD's Upper American River Hydroelectric Project). PG&E (Drum-Spaulding Project), Nevada Irrigation District (Yuba-Bear Project), and Yuba County Water Agency (Bullard's Bar Project) are currently in the process of relicensing and expect to finish soon. These relicensing procedures will direct the operating conditions of these hydropower facilities and the health of the river ecosystems for the life of their licenses, which can extend from 20 to 50 years.

A wide variety of interests advance objectives in relicensing negotiations, including: hydropower licensees, regulatory agencies, Tribes, recreation interests, and non-governmental organizations. Particularly sensitive issues include: minimum instream flows, flow variability and temperature, recreational flows, and maintenance of National Forest lands where much of the hydropower facilities are situated.

Similar to the Land Use issue, the established regulatory process provides targeted and meaningful opportunities for CABY members to advocate for their own positions and perspectives. This renders CABY a useful place to engage in discussions concerning the topics raised in the FERC process, but does not require the group to serve as a conflict-resolution body for the members.

9.6.3 Construction of New Surface Water Storage Facilities

A remaining regional conflict is the potential for additional water storage facility construction. As climate changes and population growth continues, the demand for new supplies and more reliability is requiring water agencies to evaluate all water supply options. This includes water recycling, conservation, conjunctive use, transfers, and new storage.

Some CABY stakeholders strongly believe that surface water storage (whether on- or off-stream, in combination with the use of enclosed storage tanks) is essential to the future security of water supply, not only for the region but for downstream users as well. Other CABY members and stakeholders feel that additional surface water storage should only be considered after all other conservation measures are exhausted, and the need for the facility (and its cost-benefit) can be conclusively documented. This second group is particularly concerned about the effects of additional storage on environmental systems and functions. That being said, all CABY stakeholders support operational and/or demand management changes, increased use of recycled water, increased conservation, and other measures that could obviate the need for new surface water storage.

The CABY PC has engaged in several discussions about impoundments/reservoirs in general and has engaged in limited and focused discussions about the Alder Creek facility feasibility study. It is clear from these discussions that entrenched divergence of opinion exists about use of the surface storage strategy. Ongoing discussions will continue but may not serve to resolve this conflict to the full satisfaction of either group.

9.7 Mandatory Plans and Other Considerations

9.7.1 Interface of State Documents and CABY Goals and Objectives

9.7.1.1 Basin Plan Objectives

As listed in CABY's Region Description (Chapter 5, Table 5-1), there are 14 water bodies in the region listed on the State's 303(d) list. The listing reasons include: exotic species, mercury, bacteria, fecal coliform, pH, copper, sediment/siltation, zinc, and arsenic. Sources include land disposal, agricultural practices, urban runoff and storm sewers, recreational activities (non-boating), legacy mining, and resource extraction. CABY's suite of objectives addresses these water-quality challenges through the following issues and objectives:

- Contamination: Legacy Mine Toxins
 - WQ-1: *Remediate abandoned mining sites*
 - WQ-2: *Remove legacy mining contaminants from region*
- Contamination: Urban Run-off and Abandoned Mine Land Run-off
 - WQ-3: *Increase the number of water bodies that can achieve water-quality objectives*
- Erosion and Sedimentation Management
 - WQ-4: *Restore the natural sediment transport regime*
- Headwaters Protection
 - WQ-6: *Identify watershed's most critical major urban areas' water supply*
 - WQ-7: *Maintain watershed resilience*
 - WQ-8: *Evaluate feasibility of a watershed and water quality 'credit trading program'*

9.7.1.2 20x2020 Water Conservation Legislation

All urban water agencies in California are now responsible for contributing to California’s statewide goal of 20 percent of water conserved based on a variable combined-year use level by 2020 (see California Water Code section 10608). It is CABY’s intent to encourage these activities through the sharing of regional expertise and a regular check-in regarding water conservation activities of member agencies. The CABY Planning Committee views conserving water not only as stretching the current supply, but as aiding in the conservation of electricity and wastewater treatment activities, thereby mitigating greenhouse gas emissions – it is a climate change response as much as it is a response to shortage and State mandates. The CABY Objectives answer this important part of the California Water Code through the following:

- Conservation
 - *WS-1: Implement urban water conservation programs*
- Infrastructure: Aging Infrastructure
 - *WS-2: Upgrade aging infrastructure*
- Water Storage
 - *WS-4: Assess the need and economic and environmental feasibility of new storage facilities*
- Water Management Operations: Drought
 - *WS-5: Adopt local drought and emergency preparedness*
- Water Management Operations: Recycled Water
 - *WS-6: Development of additional recycled water infrastructure*
- Water Transfers
 - *WS-7: Convene CABY discussing water transfers in and out of the region*

9.7.1.3 California Water Code, Section 10540(c)

The California Water Code (CWC) explicitly sets forth expectations for IRWM documents and groups, including considerations of the makeup of the group, what it can and cannot do, the relative authority of the IRWMP, and more. Section 10540(c) states the low bar of what IRWM Plans should address/include consideration of agricultural and urban water conservation and reliability, drinking water quality, consistency with the applicable basin plan, groundwater overdraft threats, watershed stewardship, groundwater quality threats, and disadvantaged community needs. The exact text of the CWC section is included (in italics) in Table 9-3 (below), along with references to this section and throughout the document where the particular topic is addressed.

Table 9-3 CWC section 10540(c) requirements and where they are answered within the CABY IRWMP	
(c) At a minimum, all plans shall address all of the following:	Location of standard in CABY IRWMP
(1) Protection and improvement of water supply reliability, including identification of feasible agricultural and urban water-use efficiency strategies	Chapter 9, Issues, Goals, Objectives, and Conflicts (Section 2, Water Supply), Chapter 12, Project Integration, Development, and Review Process
(2) Identification and consideration of the drinking water quality of communities within the area of the Plan	Chapter 9, Issues, Goals, Objectives, and Conflicts (<u>Section 3.1, Contamination; 3.2, Erosion and Sedimentation; and 3.3, Wastewater Management</u>)
(3) Protection and improvement of water quality within the area of the Plan, consistent with the relevant basin plan	Please see the section above which discusses the Basin Plan, and Chapter 6, Water Quality
(4) Identification of any significant threats to groundwater resources from over-drafting	Chapter 9, Issues, Goals, Objectives, and Conflicts (Section 2.6, Groundwater)
(5) Protection, restoration, and improvement of stewardship of aquatic, riparian, and watershed resources within the region	Chapter 9, Issues, Goals, Objectives, and Conflicts (Section 4, Environment and Habitat), and Chapter 12, CABY Implementation
(6) Protection of groundwater resources from contamination	Chapter 9, Issues, Goals, Objectives, and Conflicts (Section 2.6, Groundwater)
(7) Identification and consideration of the water-related needs of disadvantaged communities in the area within the boundaries of the Plan	Chapter 9, Issues, Goals, Objectives, and Conflicts (Sections 6.5, Disadvantaged Communities and 6.9, Sustainable Economy/Self Sufficient Communities), and Chapter 12, Project Integration, Development, and Review Process

Table 9-4
CABY Goals, Objectives, Target Outcomes, and Performance Measures

Issue(s)	Objective	Target Outcomes ¹	Performance Measures
Programmatic Area: Water Supply			
<i>GOAL: Ensure adequate and reliable supply that can be adapted to climate change and can meet the needs of the region</i>			
Primary Issue: Conservation	WS-1: <i>Implement urban water conservation plans</i>	<ul style="list-style-type: none"> • <i>Implement Urban Water Conservation Plans in at least five additional communities by 2020</i> • <i>Include conveyance and delivery system leak detection and control in each plan</i> 	<ul style="list-style-type: none"> • Acre feet per annum of water supply conserved or enhanced (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM) by treating less water • Number of communities implementing new (since 2012) urban water conservation plans and/or leak detection plans
Primary Issue: Infrastructure			
Aging Infrastructure	WS-2: <i>Upgrade aging infrastructure</i>	<ul style="list-style-type: none"> • <i>Implementation of at least five site-specific projects and lining or piping of at least ten miles by 2020</i> • <i>Projects can be associated with urban, rural, and agricultural water supply treatment and delivery of canal/ditches</i> 	<ul style="list-style-type: none"> • Acre feet per annum of water supply conserved or enhanced (SNC-PM) • Miles of canal/ditch lined • Number of projects implemented to upgrade or improve aging infrastructure
Interties	WS-3: <i>Complete major strategic interties between regional water agencies</i>	<ul style="list-style-type: none"> • <i>Complete three major strategic interties by 2017</i> • <i>Choose and design interties that allow for connectivity within and between delivery systems in the case of a catastrophic infrastructure failure, to allow for a backup supply and/or conduit to provide water for water treatment plants, urban and municipal drinking water supplies, and/or irrigation and agricultural water</i> 	<ul style="list-style-type: none"> • Acre feet per annum of water supply conserved or enhanced (SNC-PM) • Number of interties installed
Primary Issue: Water Storage	WS-4: <i>Assess the need and economic and environmental feasibility of new storage facilities</i>	<ul style="list-style-type: none"> • <i>By 2020, facilitate discussion with at least one agency to assess the need and determine the economic and environmental feasibility of a new storage facility and alternatives accomplishing multiple benefits</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM)

¹ NOTE: To ensure consistency with DWR guidelines, ease of comprehension for performance reviews, and to more closely match other IRWMP chapters – the Consulting Team has: shortened each objective, included the exact measurable outcome language developed by the Work Group in the column headed “Target Outcomes” and inserted performance measures from Chapter 13, Plan Performance and Monitoring.

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Water Management Operations			
Drought	<i>WS-5: Adopt local drought and regional drought and emergency management preparedness plans</i>	<ul style="list-style-type: none"> Specific plans for every local water delivery service area by 2018 Interregional, coordinated drought and emergency management plans by 2020 	<ul style="list-style-type: none"> Number of collaboratively developed plans and assessments (SNC-PM) Number of water agencies collaborating in the development of an interregional drought response
Recycled Water	<i>WS-6: Development of additional recycled water infrastructure</i>	<ul style="list-style-type: none"> Identify at least one site for recycled water infrastructure development and/or expansion by 2020 Include consideration of gray water systems Consider entire CABY region through collaborative planning 	<ul style="list-style-type: none"> Acre feet per annum of water supply conserved or enhanced (SNC-PM) Site identified for recycled water infrastructure development/expansion
Primary Issue: Water Transfers	<i>WS-7: Convene CABY meetings discussing water transfers in and out of the region</i>	<ul style="list-style-type: none"> Develop a CABY ethic and approach to water transfers by January 2015 Convene periodic (at least quarterly) meetings of interested parties Report outcomes to PC annually 	<ul style="list-style-type: none"> Number of collaboratively developed plans and assessments (SNC-PM)
Primary Issue: Groundwater	<i>WS-8: Prepare summary of requirements for approving development relying exclusively on groundwater</i>	<ul style="list-style-type: none"> By 2014 summarize the requirements for three major planning jurisdictions in the CABY region for approving developments that rely exclusively on groundwater wells as a source of water 	<ul style="list-style-type: none"> Number of county-level approval processes for groundwater-dependent community plans assessed and summarized Number of at-risk subdivisions identified Improved approval processes outlined
	<i>WS-9: Catalogue major subdivision permit denials due to possibility of unavoidable impacts due to reliance on groundwater</i>	<ul style="list-style-type: none"> By 2015, determine if there have been any denials of major subdivisions since 2010 Using this information, identify at-risk subdivisions and summarize the planning oversight process and where process could be improved 	
Programmatic Area: Water Quality			
<i>GOAL: Ensure sufficient water quality to support healthy ecosystems and dependent organisms</i>			
Primary Issue: Contamination			
Legacy Mining Toxins	<i>WQ-1: Remediate abandoned mining sites</i>	<ul style="list-style-type: none"> Annually select one abandoned mine land site for remediation and work to develop necessary plans, obtain permits and funding to ensure implementation 	<ul style="list-style-type: none"> Number of abandoned mine land sites improved or restored
	<i>WQ-2: Remove legacy mining contaminants from region</i>	<ul style="list-style-type: none"> Remove 500 pounds of legacy mining contaminants by 2020 Work with stakeholders to collaborate with the land 	<ul style="list-style-type: none"> Mass of pollutant reduced per year (SNC-PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
		<i>owner/land manager to develop/implement/fund remediation of the site</i>	
Urban Run-off and Abandoned Mine Land Run-off	WQ-3: Increase the number of water bodies that can achieve water quality objectives	<ul style="list-style-type: none"> • Implement at least five projects by 2020 • Work with affected parties to restore a natural balance to identified river systems 	<ul style="list-style-type: none"> • Linear feet of stream bank protected or restored (SNC-PM) • Mass of pollutant reduced per year (SNC-PM) • Acres of riparian habitat and/or floodplain protected or restored • Measurable improvement in water quality
Primary Issue: Sedimentation Management	WQ-4: Restore the natural sediment transport regime	<ul style="list-style-type: none"> • In at least three river reaches by 2020 • Monitor and publicize the work being done and encourage the implementation of projects designed to restore natural sediment transport 	<ul style="list-style-type: none"> • Acres of riparian habitat and/or floodplain protected or restored • Linear feet of stream bank protected or restored (SNC-PM) • Miles of stream where natural sediment transport regime is restored
Primary Issue: Wastewater Management	WQ-5: Assess the level of preparedness and prevention measures in place for wastewater spills	<ul style="list-style-type: none"> • Convene at least two regional discussions on the topic and by 2015 • CABY will work with regional agencies providing wastewater services (including small systems) • Use the discussions and agency overflow reduction plans and sewer system master plans to create a short white paper identifying the major regional issues and strategies for managing these issues 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • White paper developed identifying major regional issues and strategies
Primary Issue: Headwaters Protection	WQ-6: Identify watersheds critical to major in-region urban areas' water supply	<ul style="list-style-type: none"> • By 2014, implement at least two identification projects annually • Come to a conclusion regarding how to proceed on this issue by 2015 • Work with stakeholders to identify the major threats to those important watersheds (including wildland fire, development, insects and disease, climate change, or other threats) • Focus on watersheds that are the most critical for production of surface drinking water for the major urban areas in the CABY region 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Number of critical surface drinking water watersheds identified and major threats described

Issue(s)	Objective	Target Outcomes	Performance Measures
	WQ-7: Maintain watershed resilience	<ul style="list-style-type: none"> • Work with stakeholders in the affected areas to identify threats to watershed resilience • Develop strategies and plans that make the forests in these important watersheds more resilient to the identified threats (including removing structures, eradication of non-native invasive plants, decommission unneeded roads, revegetate stream banks, and/or improve the water-holding capacity of wetlands/riparian areas/meadows) 	<ul style="list-style-type: none"> • Number of projects addressing threats to source water areas and increased resiliency of those watersheds • Acres of land improved or restored (SNC-PM)
	WQ-8: Evaluate feasibility of a watershed and water quality 'credit trading program'	<ul style="list-style-type: none"> • Discuss with CABY stakeholders a watershed and water quality 'credit trading program' • Program should enable land managers and owners who discharge effluents into the same watershed and who must comply with regulatory requirements to purchase credits and trade them • Program should take advantage of the most economically efficient activities to facilitate compliance with water quality standards 	<ul style="list-style-type: none"> • Water quality credit trading opportunities identified
Primary Issue: Temperature	WQ-9: Improve habitat for aquatic biota	<ul style="list-style-type: none"> • Improve habitat on at least 10 miles of streams 2020, by providing water of appropriate temperatures 	<ul style="list-style-type: none"> • Linear feet of stream bank protected or restored (SNC-PM) • Acre feet per annum of streamflow improved (SNC-PM) • Acres of riparian habitat and/or floodplain protected or restored
Programmatic Area: Environment and Habitat			
<i>GOAL: Preserve and restore watershed health</i>			
Primary Issue: Fisheries			
Fish Passage	EH-1: Increase access to suitable spawning habitat for anadromous fish	<ul style="list-style-type: none"> • Make 15 additional miles of spawning habitat available by 2020 • Work with interested and affected stakeholders to identify spawning habitat potentially accessible to anadromous fish 	<ul style="list-style-type: none"> • Acre feet per annum streamflow improved (SNC-PM) • Linear feet of stream bank protected or restored (SNC-PM) • Number of anadromous fish migration barriers removed • Miles of additional spawning habitat created
Primary Issue: Aquatic Biota	EH-2: Improve aquatic and riparian habitat	<ul style="list-style-type: none"> • By 2015, identify and quantify at least three measures necessary to improve aquatic habitat not in this 	<ul style="list-style-type: none"> • Linear feet of stream bank protected or restored (SNC-PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
		<p><i>document or in other processes (such as water rights proceedings or FERC)</i></p> <ul style="list-style-type: none"> • <i>For Sierra Nevada and foothill yellow-legged frogs, remove trout in 18 acres of high mountain lakes at locations where these frogs can recolonize</i> • <i>For California red-legged frogs, create one acre of pond habitat by 2015 where existing CA red-legged frogs reside downstream and have the potential to colonize the new pond habitat</i> • <i>Improve four miles of stream by adding large woody debris by 2015</i> 	<ul style="list-style-type: none"> • Acres of riparian habitat and/or floodplain protected or restored • Acre feet per annum of streamflow improved (SNC-PM)
Primary Issue: Instream Flow	<i>EH-3: Quantify and/or secure habitat on rivers or tributaries with barrier-free ocean access</i>	<ul style="list-style-type: none"> • <i>CABY stakeholders work to quantify and secure the amount of water necessary to allow for anadromy on the two major rivers (and/or major tributaries) within the CABY region that have barrier-free access to the Pacific Ocean</i> 	<ul style="list-style-type: none"> • Acre feet per annum streamflow improved (SNC-PM)
Primary Issue: Meadows	<i>EH-4: Enhance wet meadow-complex function</i>	<ul style="list-style-type: none"> • <i>Support stakeholders in the annual development, implementation, and/or funding of five projects to maintain or enhance wet meadow complex function</i> 	<ul style="list-style-type: none"> • Number of meadow restoration or enhancement projects developed, funded, and/or implemented • Acres of land improved or restored (SNC-PM)
Primary Issue: Fire and Fuels	<i>EH-5: Increase fuel load management</i>	<ul style="list-style-type: none"> • <i>By 2017, conduct fuels management on at least 10,000 acres</i> • <i>Reduce risk of environmental and property damage by working with regional agencies to address loss/impacts from catastrophic fire through management actions</i> 	<ul style="list-style-type: none"> • Acres of land improved or restored (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM)
Aquatic Invasive Species	<i>EH-6: Implement an Aquatic Invasive Species (AIS) Program</i>	<ul style="list-style-type: none"> • <i>Collaboratively work with the State of California and others to implement an Aquatic Invasive Species (AIS) prevention program, detection program, and closure of infested water bodies program</i> • <i>Annually complete the following activities: develop and distribute prevention information to users at a minimum of 20 launch sites; survey at least 10 water</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC-PM) • Number of launch sites where AIS information was distributed (annually) • Number of sites surveyed for AIS (annually) • Number of AIS-infested water bodies identified (annually)

		<i>bodies; and collaborate with regulatory groups to rapidly close infested water bodies until the AIS are eliminated</i>	<ul style="list-style-type: none"> • Number of AIS-infested water bodies closed (annually)
Issue(s)	Objective	Target Outcomes	Performance Measures
Terrestrial Invasive Species	<i>EH-7: Implement coordinated non-native invasive plant education, prevention, and control actions</i>	<ul style="list-style-type: none"> • <i>Work with affected regional organizations</i> • <i>Implement coordinated non-native invasive plant education, prevention, and control actions to specifically treat 50 acres</i> • <i>Provide at least one annual training</i> • <i>Survey a minimum of 50 acres annually, supporting prevention through rapid detection and treatment</i> 	<ul style="list-style-type: none"> • Number of collaboratively developed plans and assessments (SNC- PM) • Acres of land improved or restored (SNC- PM) • Number of trainings conducted per year • Number of acres surveyed for terrestrial invasive species • Number of acres treated for terrestrial invasive species
Programmatic Area: Climate Change			
<i>GOAL: Anticipate climate change needs and be prepared to respond adaptively to human and ecosystem needs</i>			
<i>Objective: CC-1: Implement climate change adaptive management strategies</i>		<ul style="list-style-type: none"> • <i>By 2020, implement (or encourage the implementation of, as appropriate) three adaptive strategies identified in 2012 IRWMP update to make the CABY region more climate resilient</i> 	<ul style="list-style-type: none"> • Number of adaptive strategies implemented in the CABY region • Kilowatts of renewable energy production capacity created (SNC-PM) • Tons of carbon sequestered or emissions avoided (SNC-PM) • Number of collaboratively developed plans and assessments (SNC-PM)
<i>Objective: CC-2: Increase alternative energy and energy efficiency</i>		<ul style="list-style-type: none"> • <i>CC-2: Work with interested parties/agencies</i> • <i>Implement at least alternative energy or energy efficiency projects by 2025</i> • <i>Focus on increasing alternative energy and energy efficiency by including: small-scale hydropower, biomass, solar power, wind energy, and other clean energy options</i> 	
Programmatic Area: Human-Landscape Interaction			
<i>GOAL: Maintain and enhance functioning landscapes that provide sustainable services for humans</i>			
Primary Issue: Habitat Alteration	<i>HL-1: Provide conservation stewardship for core and connected habitat</i>	<ul style="list-style-type: none"> • <i>Collaborate with local land use authorities and property owners to identify priority lands/parcels</i> • <i>By 2025, protect 25,000 acres of core and connective habitat by bringing identified lands under permanent conservation stewardship</i> 	<ul style="list-style-type: none"> • Number of locations identified as integral to maintaining habitat connectivity throughout the CABY region • Acres of land conserved (SNC-PM) • Acres of land improved or restored (SNC- PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Native American Uses	HL-2: Increase involvement of Tribal entities in CABY activities	<ul style="list-style-type: none"> Develop sustained outreach and involvement through the Tribal Work Group participants 	<ul style="list-style-type: none"> Number and diversity of people reached (SNC-PM)
Primary Issue: Flooding	HL-3: Implement flood risk reduction projects	<ul style="list-style-type: none"> Remove flood risk from at least 50% of the current FEMA inundation zone in Placerville, Nevada City, and Grass Valley Work with affected areas to implement flood management and/or reduction projects 	<ul style="list-style-type: none"> Linear feet of stream bank protected or restored (SNC-PM) Number of significant sites protected (SNC-PM) Decrease in the number of acres covered by the FEMA inundation zone
Primary Issue: Open Space	HL-4: Provide for permanent protection of open space	<ul style="list-style-type: none"> By 2017, bring at least 30,000 acres of open space under permanent protection Collaborate with local land use authorities and property owners to preserve rural open space and the character of the CABY Region 	<ul style="list-style-type: none"> Acres of land conserved (SNC-PM)
Primary Issue: Disadvantaged Communities	HL-5: Support DAC project development activities	<ul style="list-style-type: none"> CABY member groups and other stakeholders support and work with DACs to develop high-scoring projects 	<ul style="list-style-type: none"> DAC projects make up at least 30% of the total infrastructure funding request of the CABY IRWMP on an annual basis, including all grant and loan requests to all potential funders
Primary Issue: Recreation	HL-6: Increase recreational opportunities	<ul style="list-style-type: none"> Implement at least six multi-purpose projects by 2016 that include recreation as a consideration Develop projects to maintain and enhance the recreational experience in the CABY region by working with interested agencies 	<ul style="list-style-type: none"> Number of new recreation access points (SNC-PM) Feet of trail/path constructed or improved (SNC-PM) Acres of land improved or restored (SNC-PM)
Primary Issue: Hydropower	HL-7: Increase alternative energy generation	<ul style="list-style-type: none"> Implement at least two alternative energy generation projects by 2015, with an additional two by 2020 Work with interested agencies to increase alternative energy generation, including small-scale hydropower projects and existing hydropower plant efficiency improvements 	<ul style="list-style-type: none"> Kilowatts of renewable energy production capacity maintained or created (SNC-PM) Tons of carbon sequestered or emissions avoided (SNC-PM)

Issue(s)	Objective	Target Outcomes	Performance Measures
Primary Issue: Agriculture	<i>HL-8: Advocate for regulations that support continued agricultural operations viability</i>	<ul style="list-style-type: none"> Advocate for reasonable, area-specific regulations that will preserve the viability of continued agricultural operations in the region 	<ul style="list-style-type: none"> Number and diversity of CABY region agricultural stakeholders active in the development of and lobbying for revised ILRP regulations for the Sierra Acres of land conserved (SNC-PM) Number and value of new, improved, or preserved economic activities (SNC-PM) Number of collaboratively developed plans and assessments (SNC-PM)
	<i>HL-9: Permanently protect agricultural lands</i>	<ul style="list-style-type: none"> By 2017, bring at least 30,000 acres of agricultural land under permanent protection (the purchase of development rights or another similar approach) Identify acreage that will sustain the local economic base, rural open space, and agricultural production Collaborate with local land use authorities and property owners 	
Primary Issue: Sustainable Economy/Self-sufficient Communities	<i>HL-10: Create a Sustainability Revolving Fund</i>	<ul style="list-style-type: none"> Create a Sustainability Revolving Fund of a minimum \$350,000-\$500,000 The Fund should be configured to support projects, industries, and economic pursuits that are sustained by the ambient natural resource base, including timber management, agriculture, recreation, and energy production 	<ul style="list-style-type: none"> Number and types of jobs created (SNC-PM) Number and value of new, improved, or preserved economic activities (SNC-PM) Sustainability Revolving Fund developed
Primary Issues: Governance			
Political	<i>HL-11: Continue to expand CABY's presence in the region</i>	<ul style="list-style-type: none"> Ensure that all CABY member organizations understand the current status of the CABY IRWMP and the potential benefits received to support their own organizations' mandate(s) Annually: Have the CABY executive director (or designated alternate) present CABY to the elected boards of all CABY member agencies 	<ul style="list-style-type: none"> Continued increase in CABY membership/ CABY IRWM Plan adoptees Number of presentations to CABY member organizations per annum Number and diversity of people reached (SNC-PM)
Legislative	<i>HL-12: Enhance legislators' understanding of the Sierra Region</i>	<ul style="list-style-type: none"> CABY stakeholders will participate in at least one Sierra Lobby Day at the Capitol each year Efforts will focus on furthering support for the IRWMP objectives and enhance legislators' understanding of the Sierra Region 	<ul style="list-style-type: none"> Number of stakeholders participating in Sierra Lobby Day Number of outreach opportunities taken with State government officials to advocate for source water IRWM regions

Issue(s)	Objective	Target Outcomes	Performance Measures
	HL-13: Monitor regulatory processes with the potential to affect water resources in the region	<ul style="list-style-type: none"> The CABY organization, with the help of member groups, will monitor regulatory processes that have the potential to affect water resources in the region Activities may include regular presentations by member groups and/or outside entities seeking to inform and/or recruit CABY's support 	
Regulatory	HL-14: Identify persistent conflicting regulations that hinder implementation of the CABY IRWMP	<ul style="list-style-type: none"> By 2013, appoint a committee to identify persistent conflicting regulations that hinder implementation of the CABY IRWMP By 2015, work to introduce legislation on at least two issues (including the sale of recycled water and/or treated effluent to downstream users) 	<ul style="list-style-type: none"> Regulatory issues committee developed by 2013 Legislation introduced for two regulatory issues by 2015
Primary Issues: Other			
Education and Outreach	OV-1: Integrate education into all CABY projects and programs	<ul style="list-style-type: none"> Where possible, outreach and education will be integrated into all CABY projects and programs This will include both school education and public and community outreach 	<ul style="list-style-type: none"> Measurable changes in knowledge or behavior (SNC-PM) Number and diversity of people reached (SNC-PM) Number and types of jobs created (SNC-PM)
Financial Feasibility	<i>No objective developed – will be included in the finance chapter</i>		
Data Analysis and Monitoring	OV-2: Maintain the Data Management System	<ul style="list-style-type: none"> It is the intent of this Plan to share useable data and information across the region (on the SWIM site or another appropriate public database) both during plan preparation and implementation Help assure best management and coordination throughout the region over time 	<ul style="list-style-type: none"> CABY documents are annually updated in the SWIM data management system

Issue(s)	Objective	Target Outcomes	Performance Measures
Regional Planning and Land use	<i>OV-3: Coordination of planning activities across the region</i>	<ul style="list-style-type: none"> • <i>Encourage that all planning in the region be completed in a coordinated fashion</i> • <i>Ensure communication and shared solutions for the benefit of the region</i> • <i>Emphasize school and community education regarding stormwater run-off and the positive effects of low-impact design</i> 	<ul style="list-style-type: none"> • Land use planners are active in the CABY RWMG • Number of collaboratively developed plans and assessments (SNC-PM) • Percent of pre-project and planning efforts resulting in project implementation (SNC-PM)